Briefing to:
The Modeling and Simulation Community

TRANSPORTATION M&S FOR THE DTS

PROVIDING END-TO-END FORCE PROJECTION ANALYSIS

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STRANSCOM TCJ5
3 JUNE 1999

MOBILITY MODELING AND SIMULATION OVERVIEW

- **M&S ANALYSIS**
  - **MOBILITY REQUIREMENTS STUDY 2005**
- **M&S DEVELOPMENT**
  - **END-TO-END FORCE PROJECTION MODELING**
- **M&S MANAGEMENT FOR THE DTS**
  - **USTRANSCOM M&S MASTER PLAN**
- **M&S FUTURE INITIATIVES**
  - **ACTD'S … ALP … JSIMS … JWARS … TPFDD-IN-AN-HOUR**

KEY RESPONSIBILITIES

Single Manager for the Defense Transportation System

- Air Refueling
- Joint Operational Support Airlift Scheduling
- Defense Courier Service
- Aeromedical Regulating
- Transportation Working Capitol Fund

MILITARY SEALIFT COMMAND

MILITARY TRAFFIC MANAGEMENT COMMAND

AIR MOBILITY COMMAND

UNITED STATES TRANSPORTATION COMMAND
DIRECTORATE OF PLANS AND POLICY
(ISSUES)

7 Procurement
Modernization
rastructure
Route Basing
A
D Attacks
N:Future Analysis
n vs Actual
ining
ater Airlift
hnology
FDD Analysis

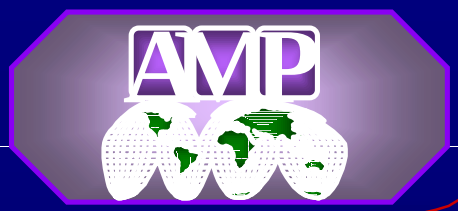
"GETTING TO THE FIGHT. . .

MOBILITY MODELING AND SIMULATION REQUIREMENTS

- **PROGRAMMATIC ANALYSIS**
  - **MRS-05 … QDR**
- **DELIBERATE PLANNING**
  - **REFINEMENT CONFERENCE**
- **EXERCISES**
  - **USFK EXEVAL99 … TURBO CHALLENGES … AGILE LION**
- **WARGAMES**
  - **FOCUSED LOGISTICS WARGAME (FLOW) … PW … GEIV**
- **EXECUTION ANALYSIS**
  - **MCC ANALYSIS SUPPORT (DESERT STORM LIKE)**

TRANSPORTATION ANALYSIS

REQUIREMENTS BASED



CARGO

REQUIREMENT

RISK

DELIVERY

AIRLIFT
SEALIFT
PREPO
INFRASTRUCTURE

TIME

CAPABILITY BASED

CARGO

REQUIREMENT

CAPABILITY

REDUCE REQUIREMETS
DELAY REQUIREMENTS

TIME

FORCE PROJECTION BUSINESS

PROVIDING END-TO-END ANALYSIS

CONUS

STRATEGIC

THEATER(S)

AMP

CONUS - STRATEGIC - THEATER

MULTIPLE OPERATIONS

1991 … DOD LACKS TOOLS FOR "END-TO-END" MOBILITY MODELING

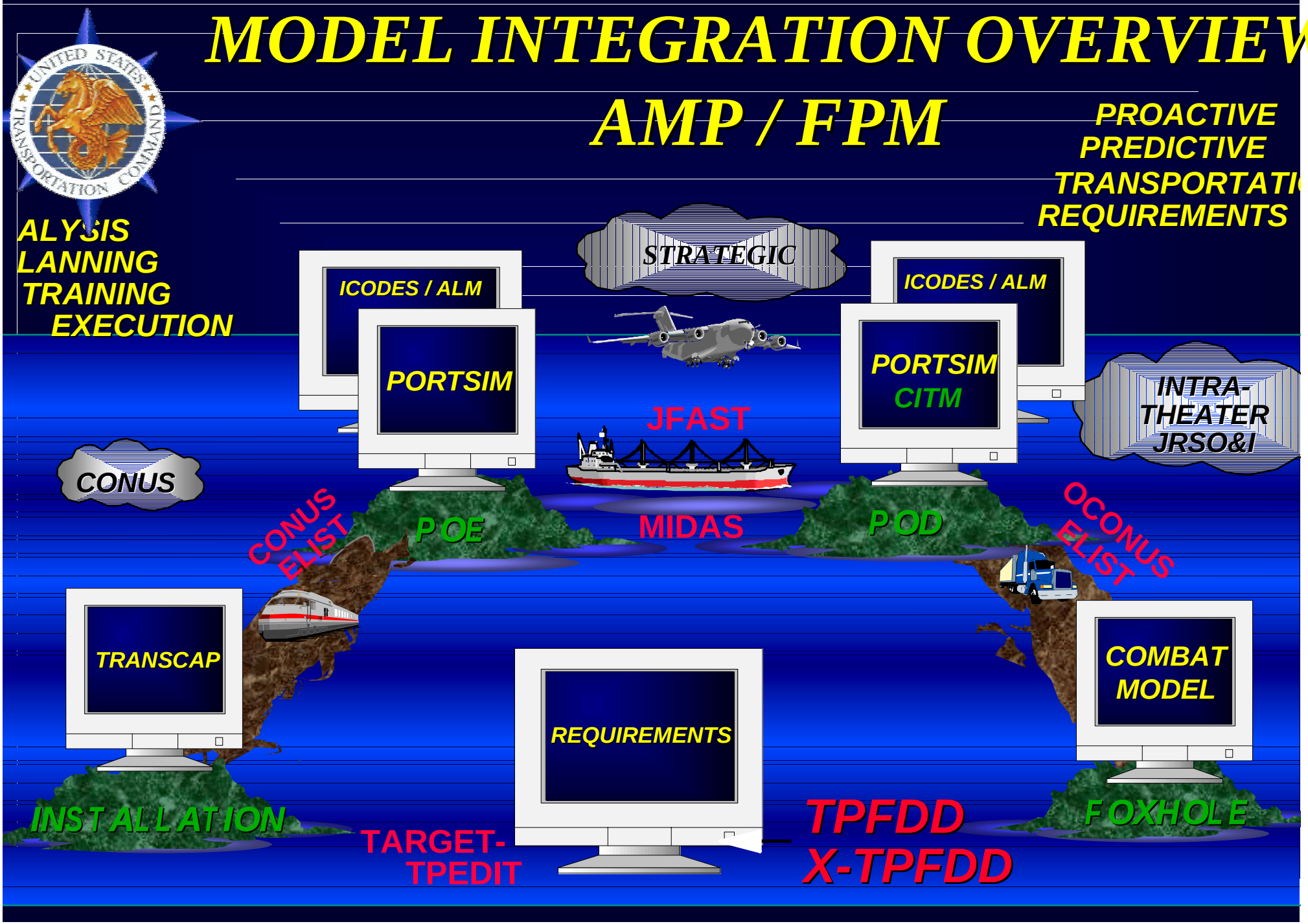
1994 ...PART OF GTN FUTURE OPERATIONS CAPABILITY

MODEL INTEGRATION OVERVIEW

AMP / FPM

PROACTIVE
PREDICTIVE
TRANSPORTATI
REQUIREMENTS

ALYSIS
LANNING
TRAINING
EXECUTION



TRANSPORTATION ANALYSIS, MODELING & SIMULATION

PBD 870

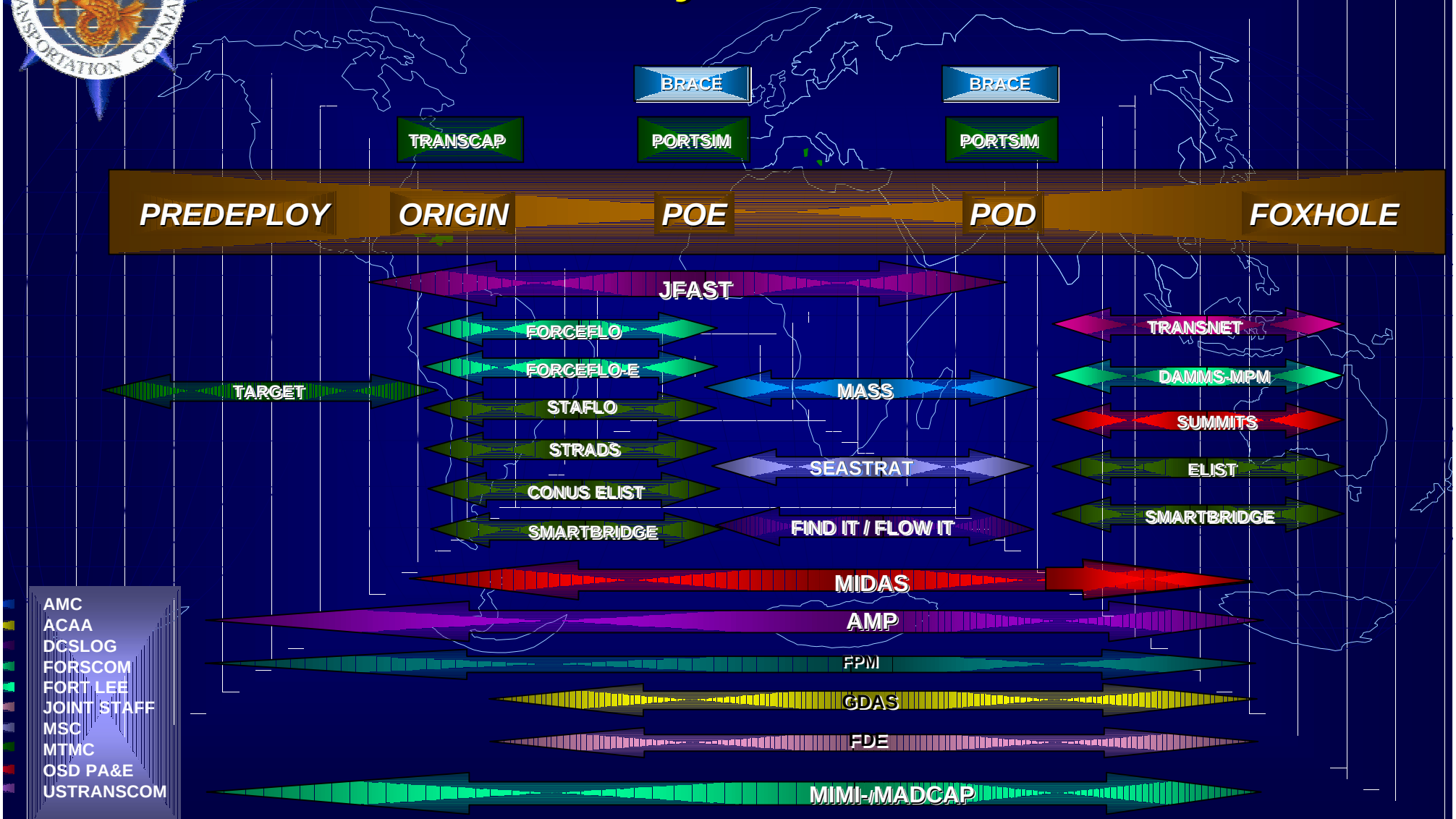
TAMS

DOD Modeling and Simulation Master Plan

1996

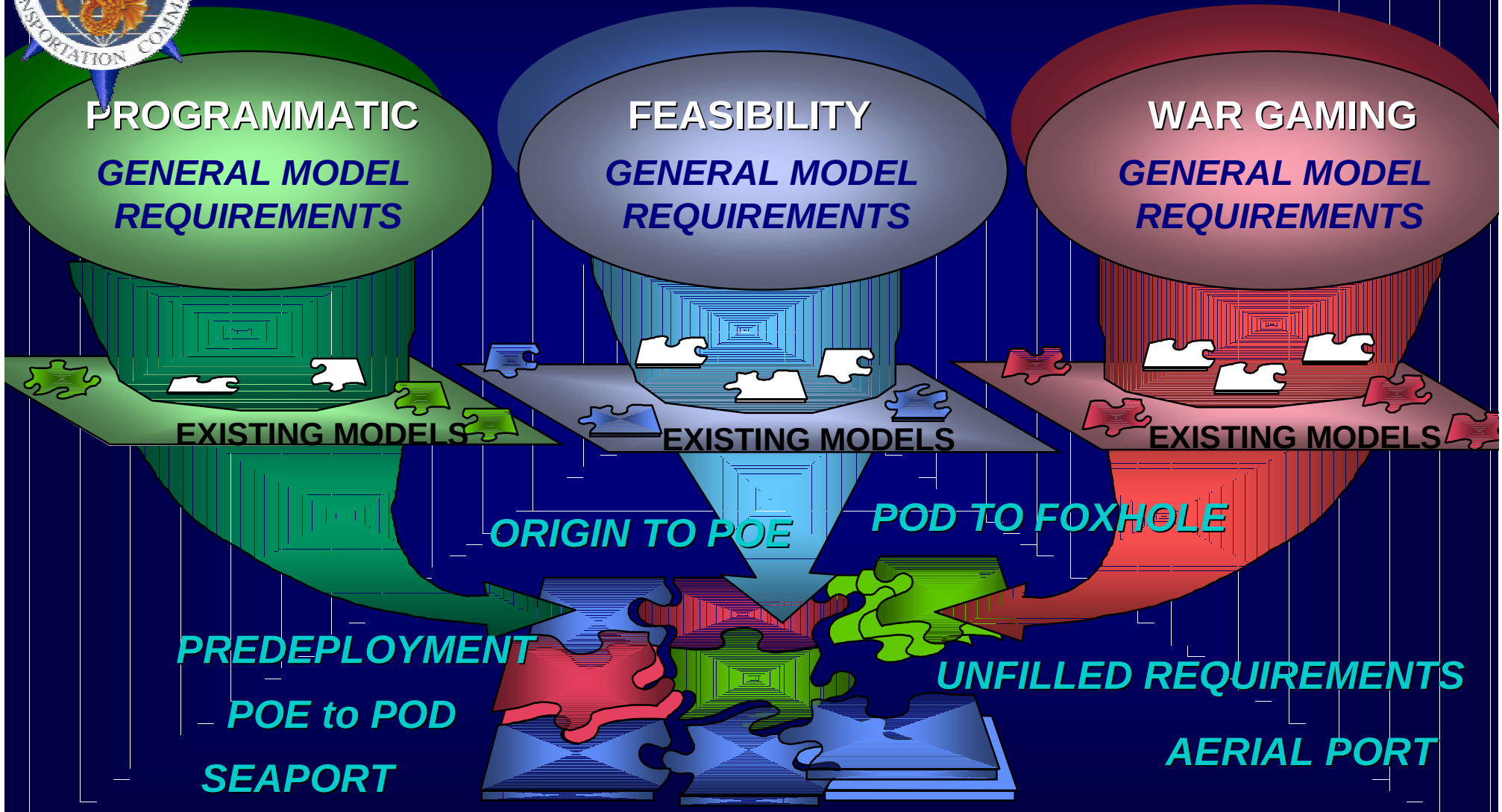
TRANSPORTATION ANALYSIS, MODELING & SIMULATION

"As-Is" System Data Collection



TRANSPORTATION ANALYSIS, MODELING & SIMULATION

DEVELOP END-TO-END ALTERNATIVE



ALTERNATIVES FOR COMMON MODEL SUITE

USTC M&S DRIVERS

TCC Requirements & Capabilities

USTC Strategic Plan

USTC Business Rules

TAMS

TAFIM

GTN

DII COE

SHADE

HLA

JTA

JWARS

Data Standards & Quality

VV&A

JSIMS

Security

OSD Studies

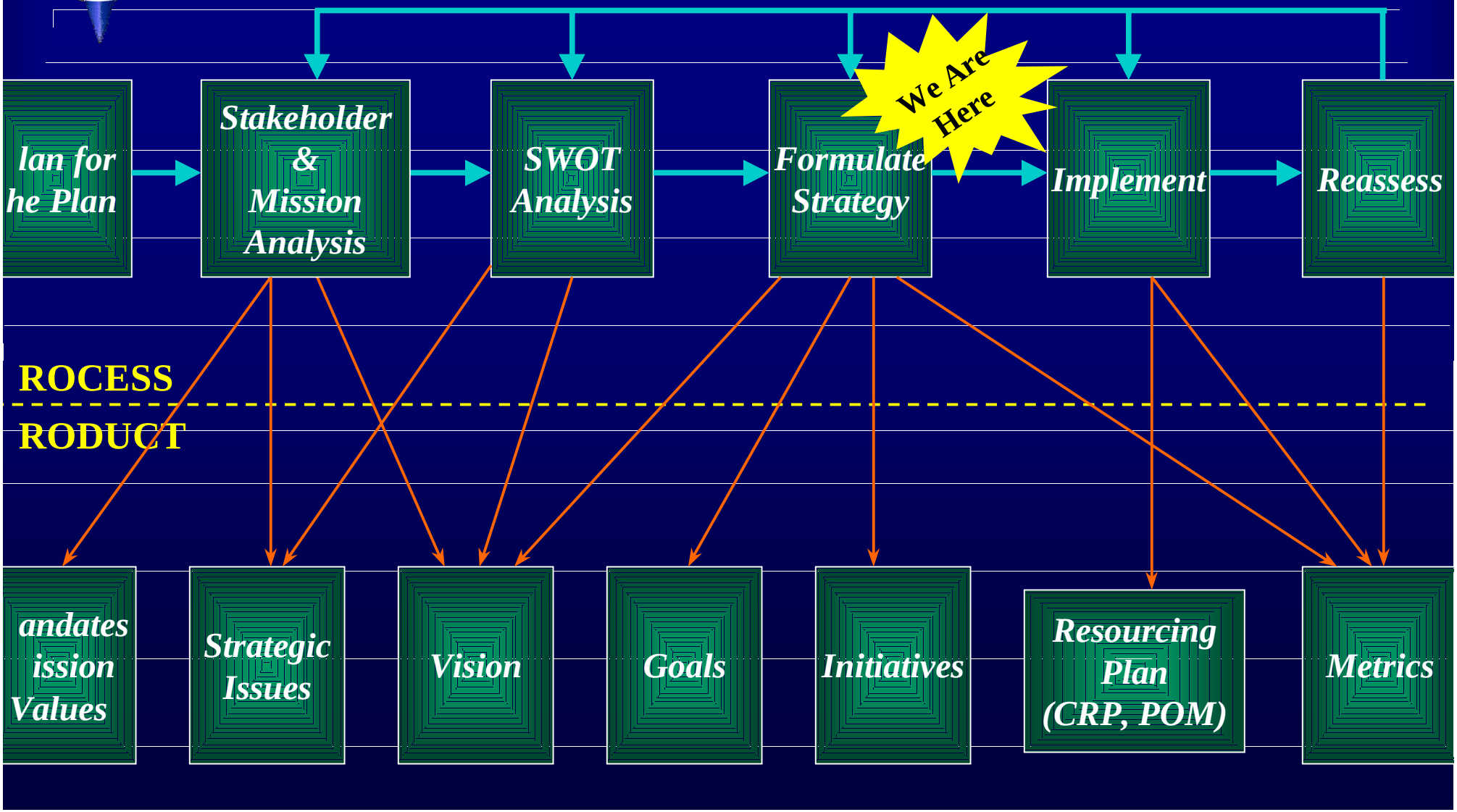
Wargames

Exercises

DOD MSMP

Advanced Technology Initiatives

MSMP DEVELOPMENT APPROACH



CURRENT ENVIRONMENT

TAMS MODELS

CONUS ELIST

MIDAS

ELIST

JWARS

GTN

Execution

Exercise

AMC Models

MASS, AMSIM, BRACE, CAMPS

JFAST

SEASTRAT

STRADS

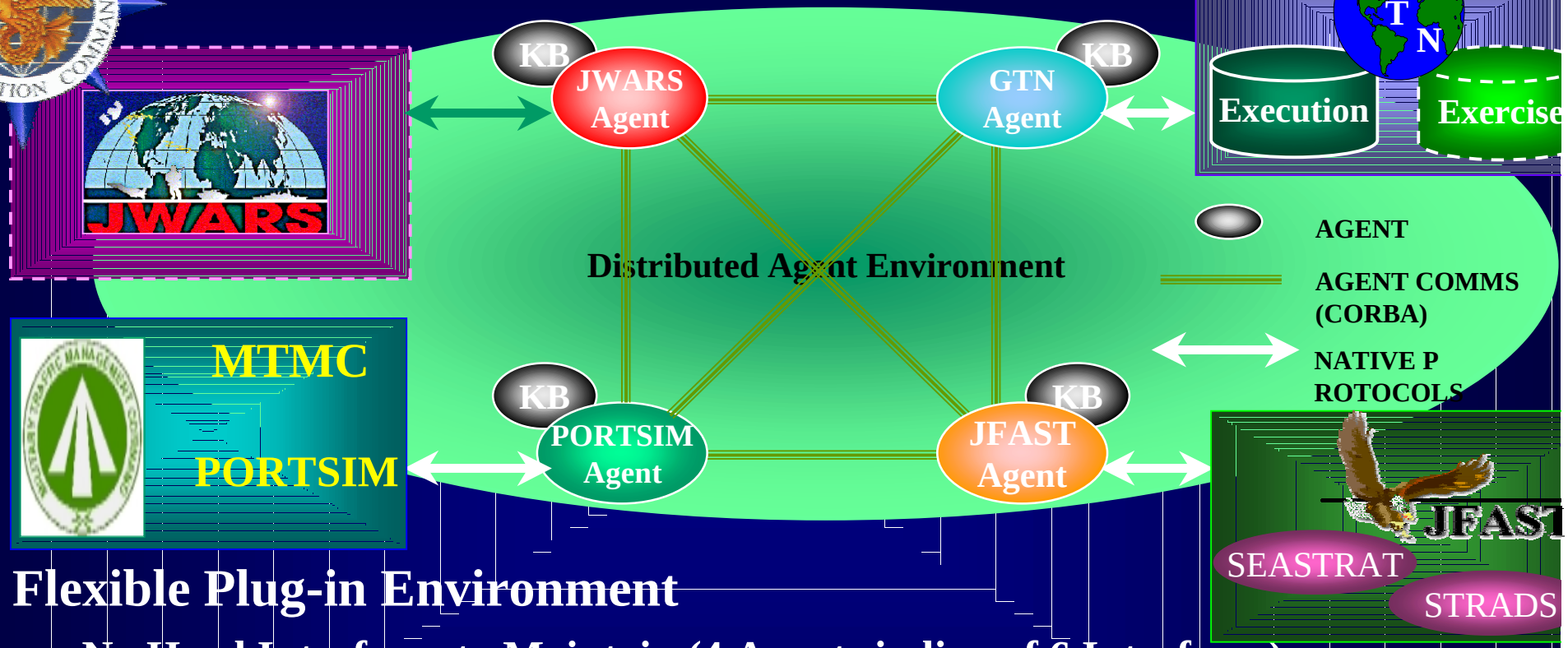
MTMC Models

PORTSIM, ICODES, TRANSCAP, TARGET

Single, Focused M&S Vision for the DTS:

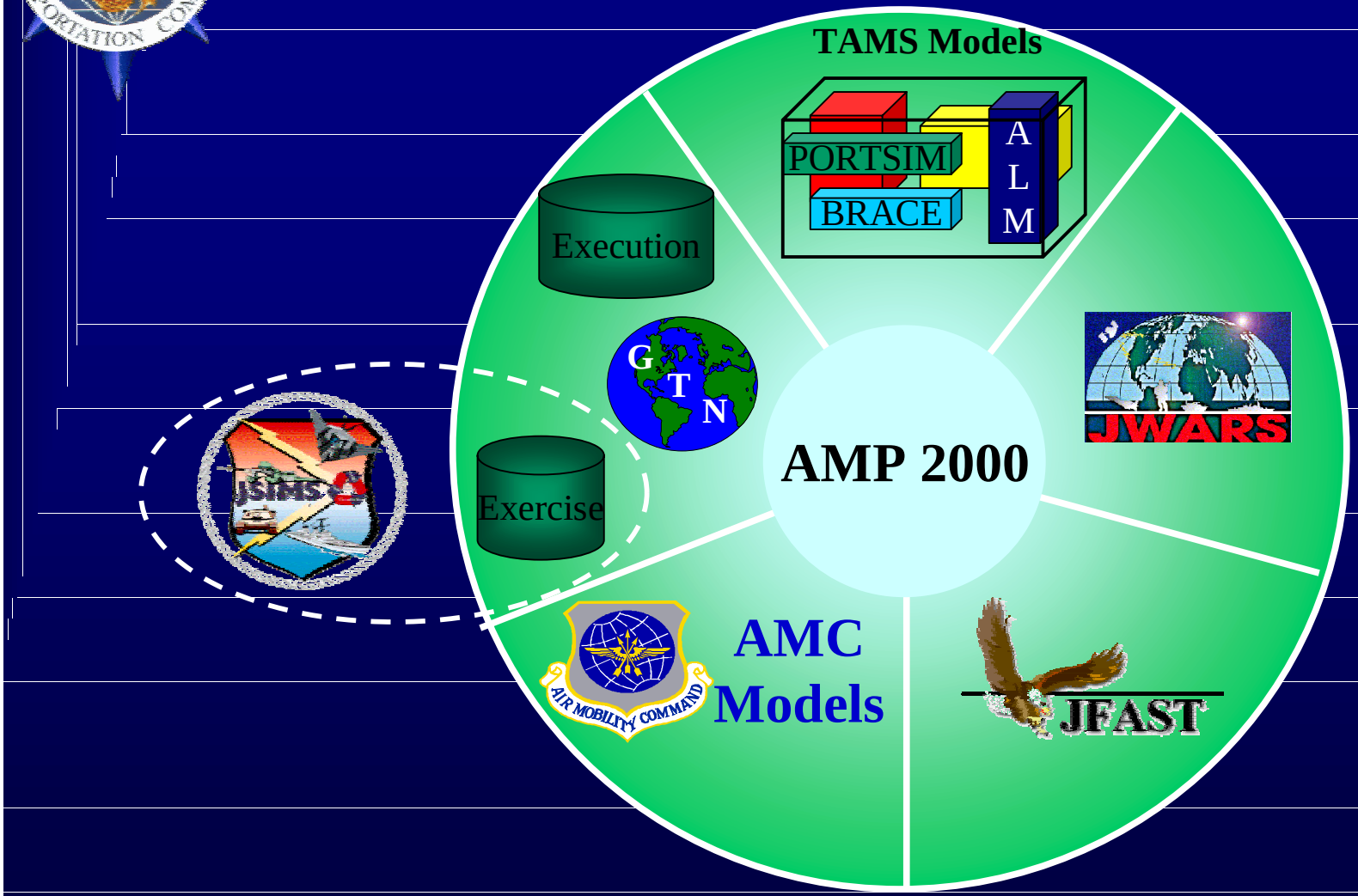
single M&S environment of interoperable, collaborative models and execution systems capable of providing accurate and consistent answers at the required breadth and depth of the DTS domain."

M&S AGENT ARCHITECTURE



- **Flexible Plug-in Environment**
  - No Hard Interfaces to Maintain (4 Agents in lieu of 6 Interfaces)
  - Knowledge Base (KB) provides Rules to Translate b/w Global Agent Model and Domain Models
- **Agent Behaviors**
  - Intelligent Data Retrieval, Mediation, Aggregation
  - Remote Invocation of Models (Setup, Run, Return Results)

BRINGING IT ALL TOGETHER



FUTURE DTS ENVIRONMENT

- *FOCUSED ON FORT TO FOXHOLE*
- *RESPONSIVE AND FLEXIBLE*
- *USE BEST BUSINESS PRACTICES*

S SINGLE MANAGER OF THE DTS, CINCTRANS CHARGED WITH INTEGRATIN DTS OPERATIONS, PROCEDURES, AND PROCESSES

JOINT VISION 2010

Information Superiority

Dominant Maneuver

Precision Engagement

Technological Innovations

Coalition Partners

Joint Forces

Focused Logistics

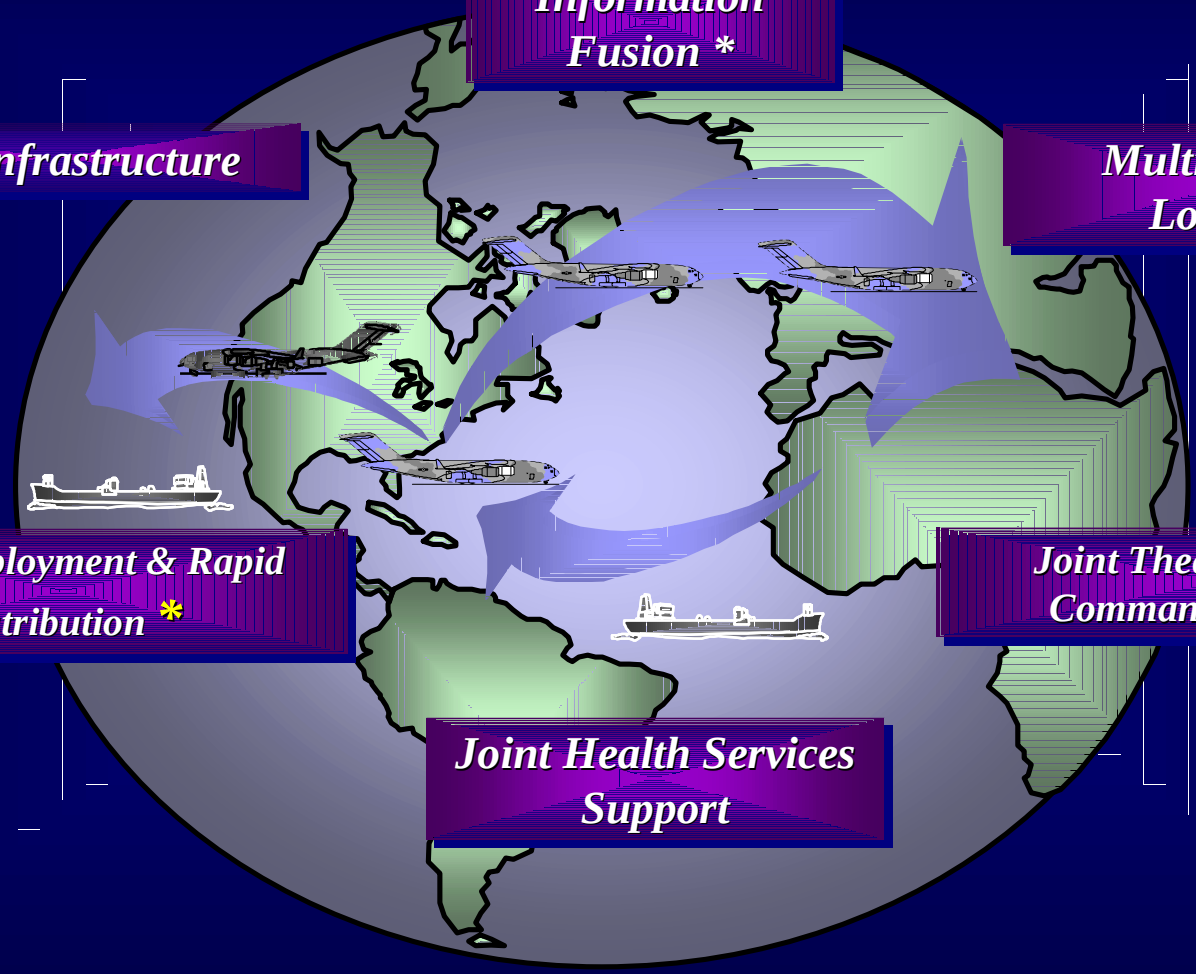
Full-Dimensional Protection

Massed

Effects

- **Advanced Logistics Project**
  - ➤*Push the limits of technology*
  - ➤*Cause a fundamental change in the way we do business*

TENETS OF FOCUSED LOGISTICS



Information Fusion *

Agile Infrastructure

Multinational Logistics

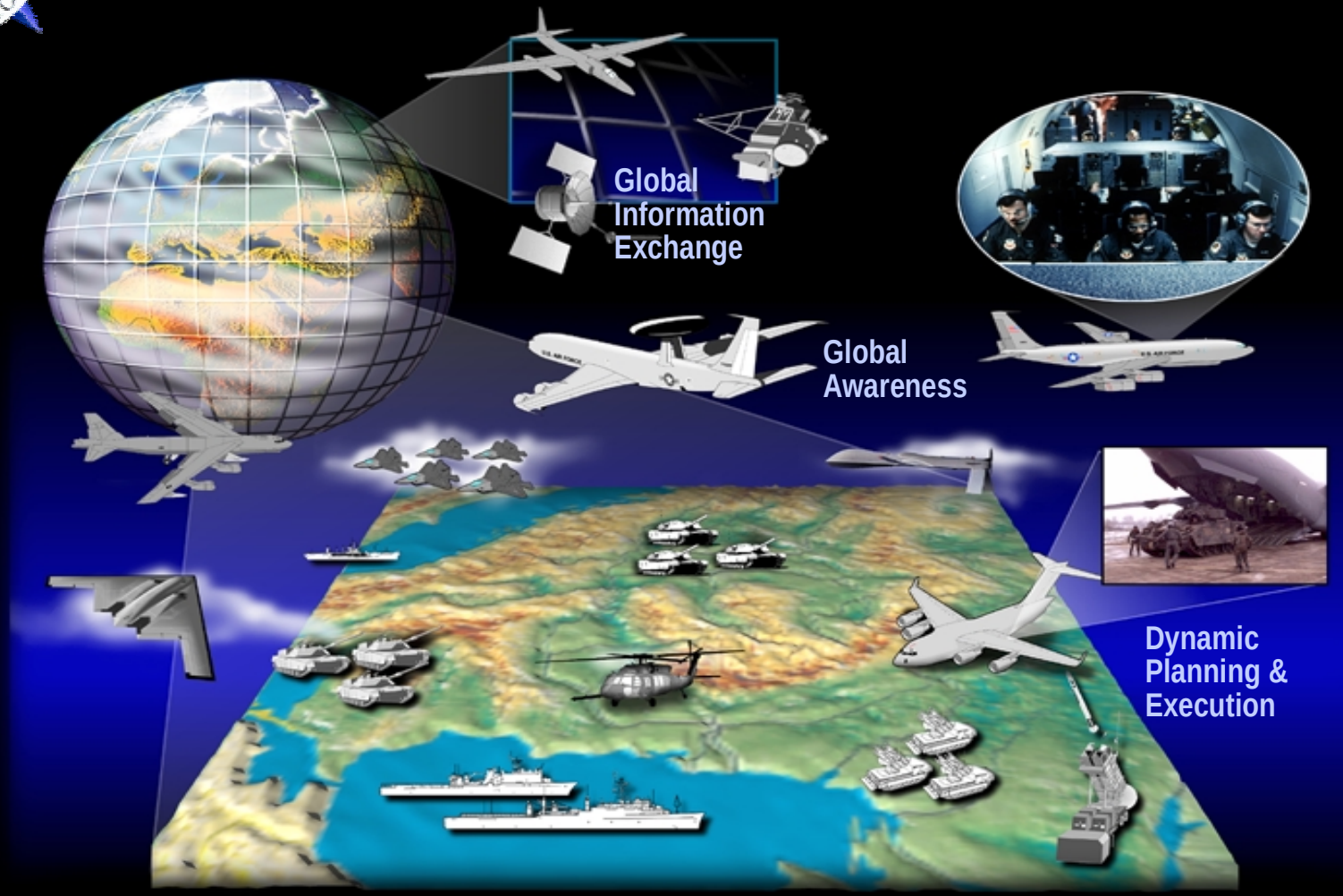
Joint Deployment & Rapid Distribution *

Joint Theater Logistics Command & Control

Joint Health Services Support

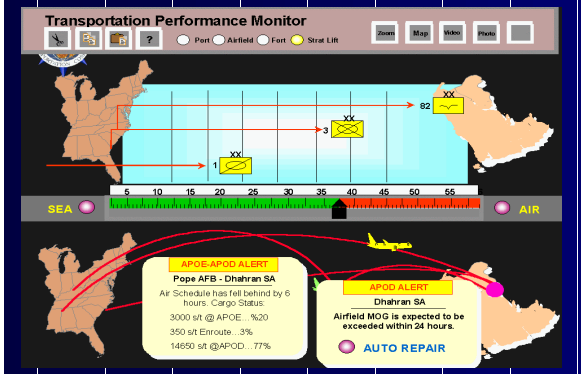
* Key USTRANSCOM Role

GLOBAL VIEW OF TRANSPORTATION

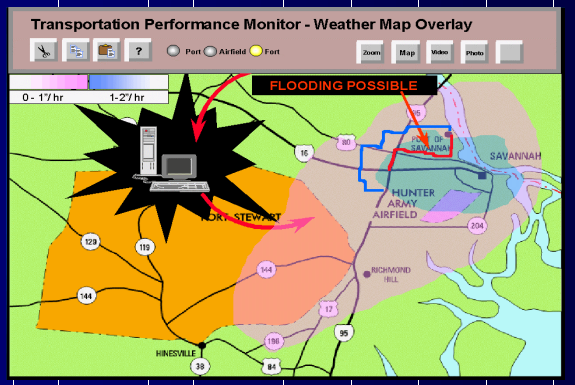


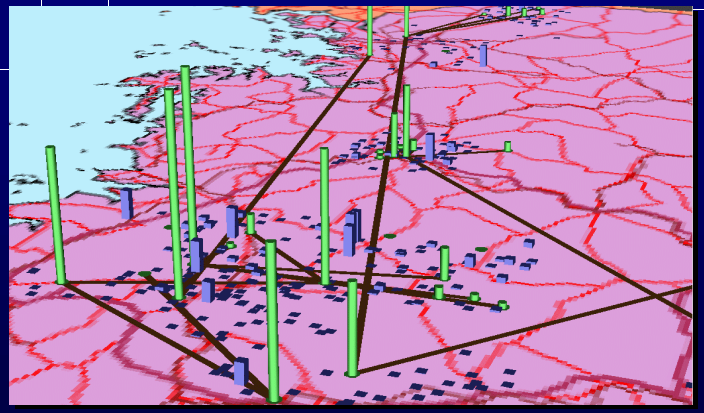
AT2000 VISION: TRANSPORTATION COP (TCOP)

eployment Performance Monitor



Weather Overlay at Installation





ransportation Capability Mgr.

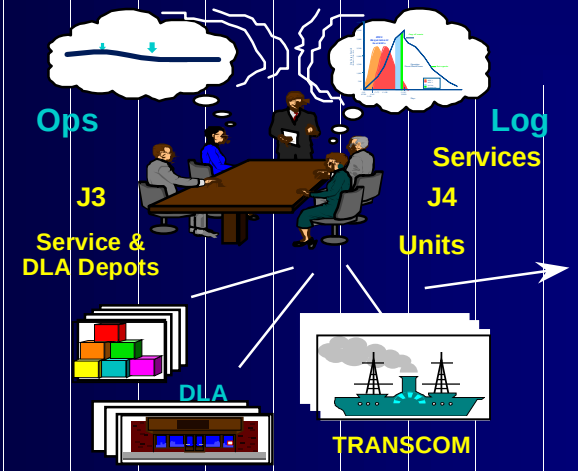
Transportation Performance Ins

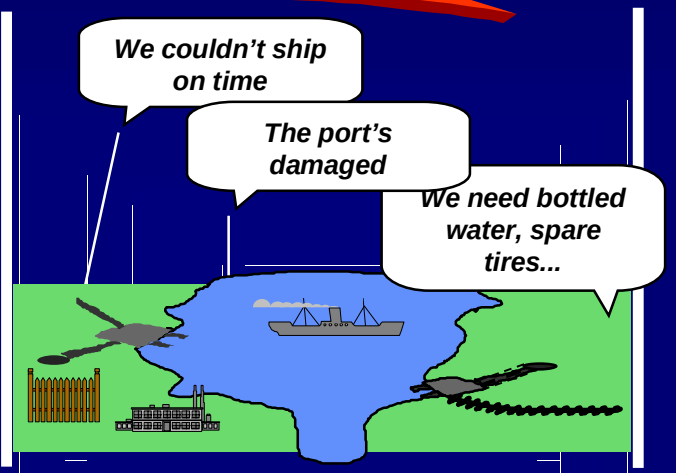
VISIONARY CONCEPT

Overarching issue: Logistical control

– Managing the pipeline – Visibility into the process

Planning the pipeline





Develop Plan

- *Collaboratively analyze tradeoffs of multiple Logistics COAs*
- *Globally optimize*
- *Executable detail*

Monitor Execution

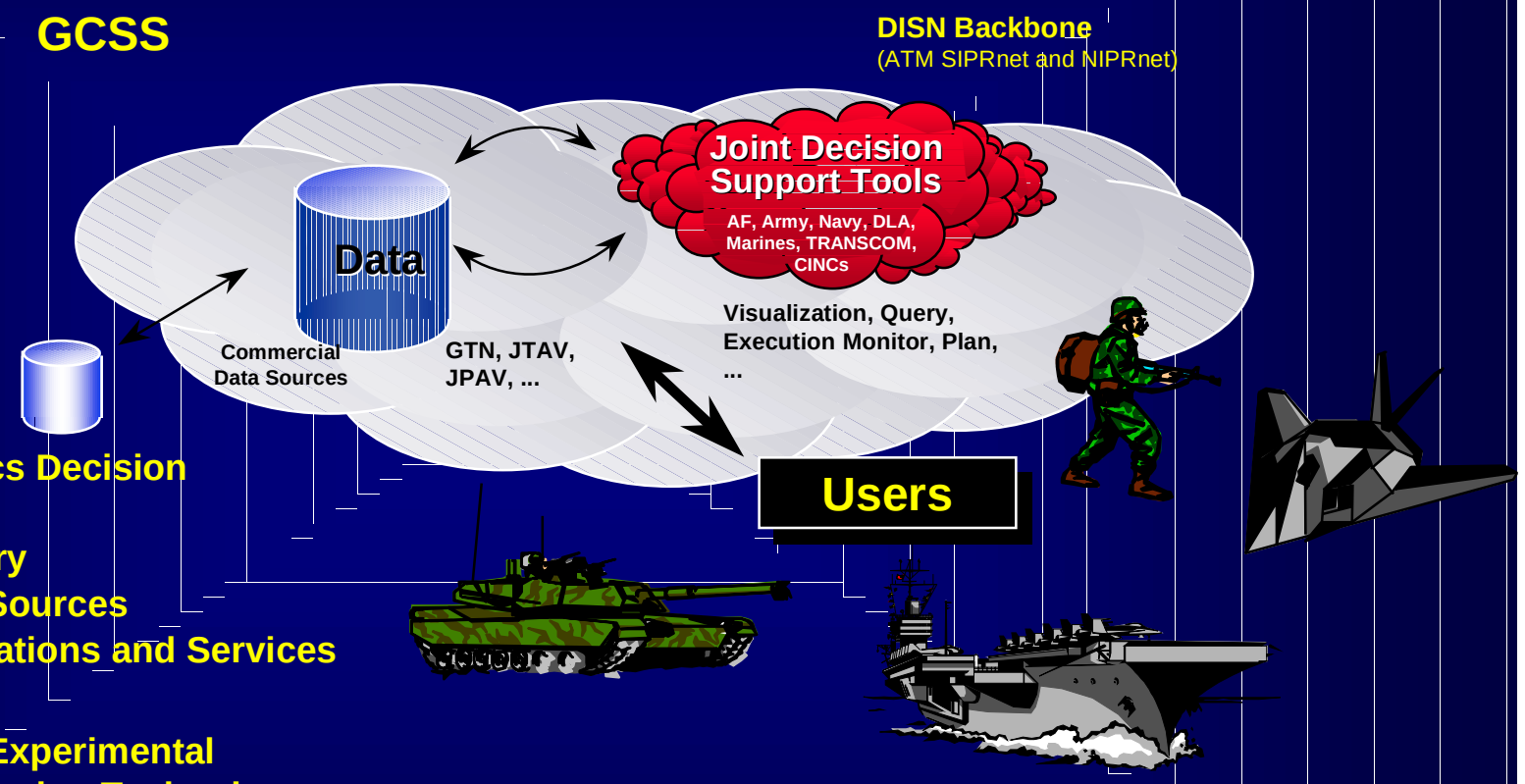
- *Detect plan deviation*
- *Identify affected plan components*
- *Notify key players*
- *Execute IAW Plan*
- *Manage flow*
- *Create plan sentinels*

Replan

- *Redirected flow*
- *Locally optimal fixes*
- *Done in time to matter*

IN-STORAGE IN-PROCESS IN-TRANSIT IN-THEATER

Joint Logistics Advanced Concept Technology Demonstration (JL-ACTD)



Goals

- Develop Joint Logistics Decision Support Tools
  - –Common User Query
  - –Access to all Data Sources
  - –Transparent Applications and Services
  - –Any User/Any Box
- Implement a Flexible Experimental Environment for Assessing Technology Impact on Logistics Operational Capability
- Work Trade-Offs, Users Derive Requirements

FY 96 - 97
Logistics Anchor Desk (LAD) Phase I

FY 98 - 99
Joint Decision Support Tools Phase II

FY 00 - 02
Real-Time Focused Logistics Phase III

JWARS MISSION

MISSION:

DEVELOP STATE-OF-THE-ART CLOSED-FORM SIMULATION ANALYSIS TOO

- **JOINT, CAMPAIGN-LEVEL WARFARE**
- **REPRESENT UNIQUE JOINT FUNCTIONS & PROCESSES**
- **ADDRESS JOINT DOCTRINE**
- **MODEL FUTURE WARFARE**

USERS:

- **JOINT STAFF**
- **SERVICES**
- **CINCs**
- **OSD**
- **JTFs**
- **Other DoDorg's**
- **Industry**

APPLICATIONS:

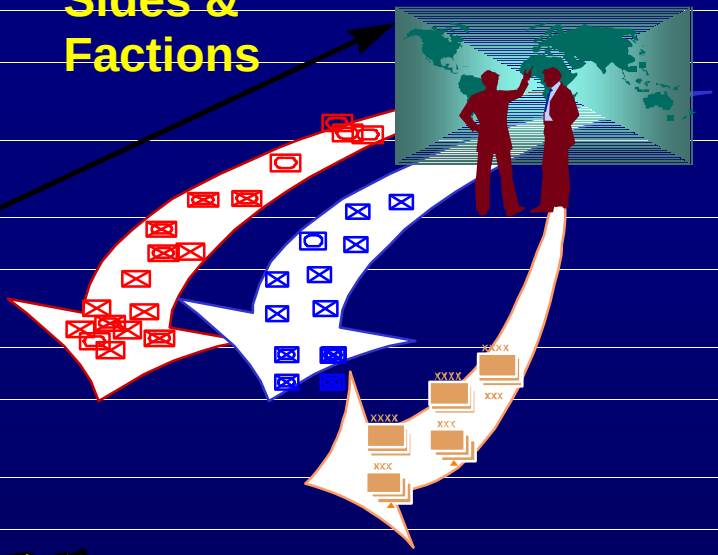
1. **Planning and execution**
   - **Deliberate planning**
   - **Crisis action planning**
2. **Force assessment**
3. **System effectiveness and trade off analysis**
4. **Concept and doctrine development and assessment**

JSIMS TRAINING ENVIRONMENT

Training Audience

JSIMS

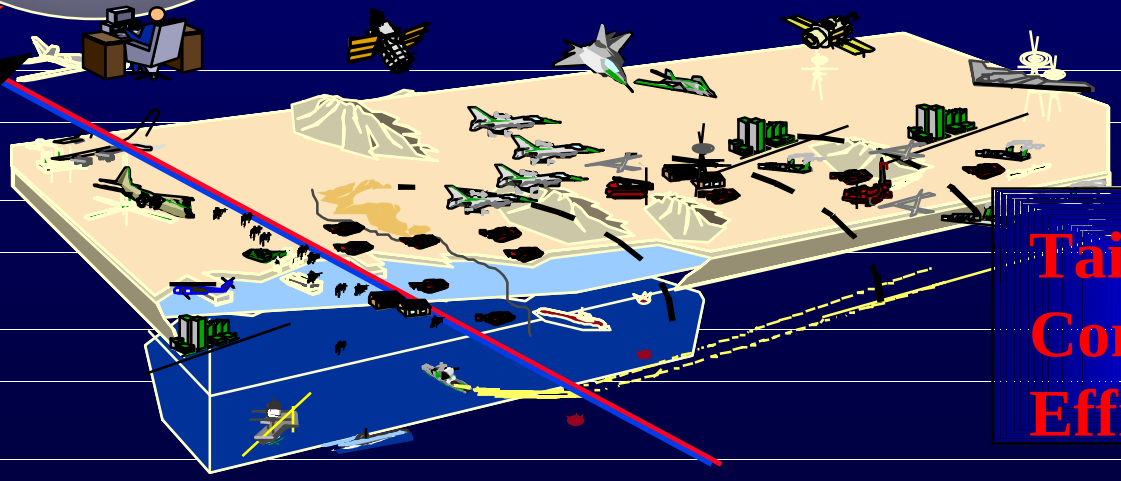
Multiple Sides & Factions



Exercise Control

C⁴I systems

- GTN CSDB 1Q FY99
- GTN Rel. 5 FY01



Tailorable
Composable
Efficient

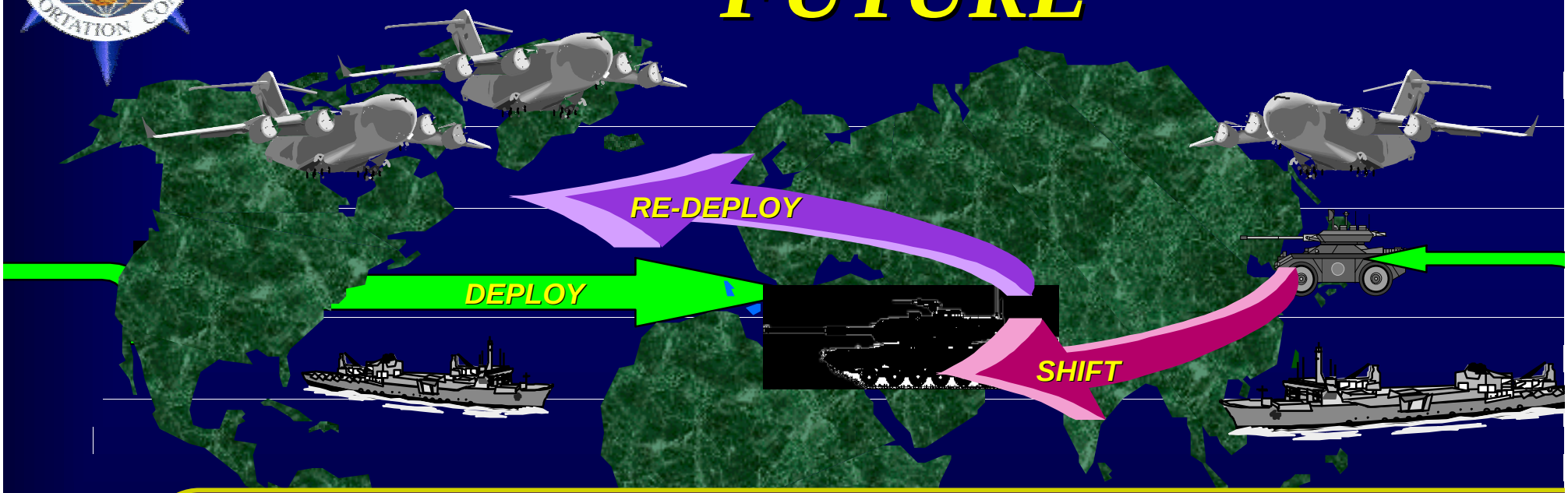
A joint, distributed, synthetic battlespace for all DoD players

TPFDD IN AN HOUR

AN ENABLER FOR A

. . . More Responsive Joint Deployment Process

FORCE PROJECTION FUTURE



OPERATIONAL OUTPUT

- TREND ANALYSIS...PREDICTIVE ANALYSIS…TPFDD HR
- VISIBILITY OF ASSETS AND REQUIREMENTS
- COLLABORATIVE PLAN & EXECUTE
- INFLUENCE DECISIONS & REDUCE UNCERTAINTY

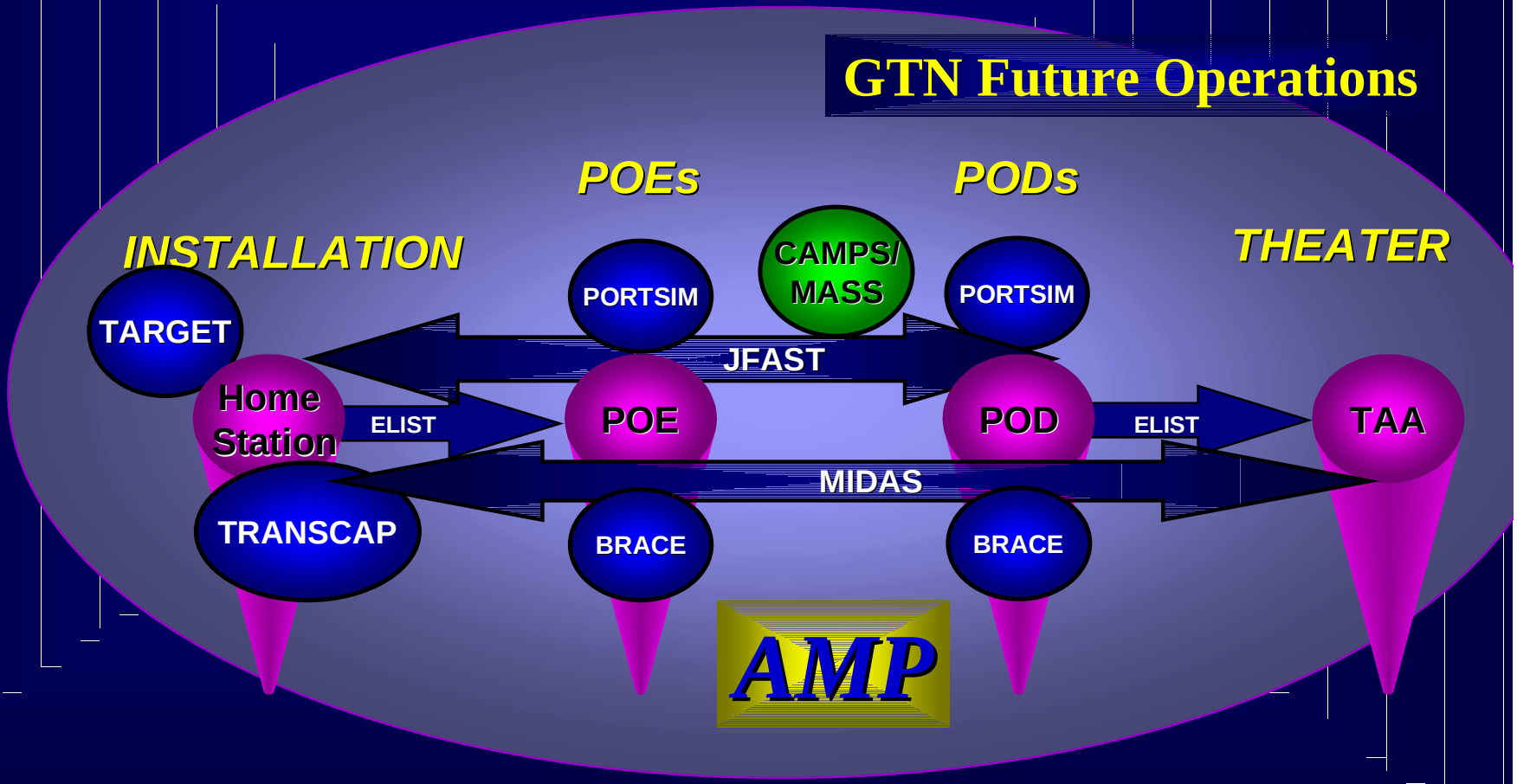
DTS 2010 . . . on the way

TRANSPORTATION ANALYSIS, MODELING & SIMULATION

SYSTEM RECOMMENDATIONS

GRATION STEMS

CAMPS
CE MASS
ST
AS
TSIM
GET
NSCAP
T (CONUS)
T (OCONUS)



= MIGRATION SYSTEMS

= SUPPORTING SYSTEMS